

JUL 20 2006

Patent  
Serial No. 10/527,107  
Amendment in Reply to Office Action of April 20, 2006REMARKS/ARGUMENTS

This Amendment is being filed in response to the Office Action dated April 20, 2006. Reconsideration and allowance of the application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1-12 were pending in the Application. Claim 4 is canceled herein without prejudice. The subject matter of original claim 4 has been amended to claim 1 as originally submitted. By means of the present amendment, Claims 1-3 and 5-12 have been amended for better conformance to U.S. practice, such as deleting reference numerals typically used in European practice that are known to not limit the scope of the claims. Further amendments include changing "characterized in that" to "wherein--", correcting typographical errors as well as correcting certain informalities noted upon review of the claims. Claims 1-3 and 5-12 were not amended in order to address issues of patentability and Applicant respectfully reserves all rights under the Doctrine of Equivalents. Applicant furthermore reserves the right to reintroduce subject matter deleted herein at a later time during the prosecution of this application or continuing applications. Claims 13-17 are added by this amendment. In addition, the specification is amended to correct typographic errors noted upon review. No new matter is added by these amendments to the specification and entrance of the amendments to the specification is respectfully requested. Claims 1, 10, and 15 are independent claims.

In the Office Action, Claims 8 and 9 are objected to for allegedly being in improper dependent form for failing to further limit the subject matter of previous claims. Applicant respectfully disagrees with and explicitly traverses this ground for rejecting Claims 8 and 9. It is the Applicant's position that the claims are proper as submitted. However, in the interest of furthering

Patent  
Serial No. 10/527,107  
Amendment in Reply to Office Action of April 20, 2006

the prosecution of this matter, Applicant has elected to amend the claims to more clearly state a computer program product ... [that] configure the decoder/computer to carry out each of the acts in any one of claims 1-3. No new matter is added by these amendments. Clearly Claims 8 and 9 serve to further limit the subject matter of previous claims. Accordingly, it is respectfully requested that the objection of Claims 8 and 9 be withdrawn.

Claims 1 and 2 are objected to for certain informalities. Claims 1 and 2 have been amended to correct the informalities noted by the Examiner. Accordingly, withdrawal of the objection to claims 1 and 2 is respectfully requested.

The drawings are objected to for failing to include "Prior Art" legends in figures 1, 2, and 5. These objections are respectfully traversed. It is respectfully submitted that figures 1, 2, and 5 illustrate elements in accordance with the present invention and accordingly, the legend "Prior Art" is not appropriate. For example, the specification on page 2, lines 26-27 states that "figure 1 is a general schematical view of a transmission chain, comprising an encoder and a decoder according to the invention ..." Regarding figure 2, the specification makes clear on page 2, lines 28-29 that "figure 2 is a VLC codewords table associated with the variable-length codewords sequences used in the encoder and the decoder of figure 1 ..." Lastly, regarding figure 5, the specification states that "figure 5 is a representation of a tree associated with the VLC table of figure 2 ..." Since each of the figures represent diagrams or data that operates or is utilized in accordance with the present invention, it is respectfully submitted that it would not be proper to designate figures 1, 2 and 5 as "Prior Art." Since it should now be clear that figures 1, 2 and 5 are proper as submitted, it is respectfully requested that this objection to the drawings be withdrawn.

Patent  
Serial No. 10/527,107  
Amendment in Reply to Office Action of April 20, 2006

Claims 1-12 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by Sivasankaran et al. Twin-Stack Decoding of Recursive Systematic Convolutional Codes, IEEE Transactions on Communications, Col. 49, no. 7, July 2001 (hereinafter "Sivasankaran").

Sivasankaran shows a method for soft-in/soft-out sequential decoding of systematic convolution codes (sec, abstract, lines 1-2). To that end, Sivasankaran proposes a stack algorithm that searches through a tree of convolution codes (see, page 1159, paragraph A, lines 2-3). The decoding process begins with the root. During each decoding sequence, the top most node of the stack is removed (see, page 1159, paragraph A, lines 3-7 and 11-12) and the stack is extended "one interval of time." (See, page 1159, paragraph A, lines 7-8.) Further, during each sequence the "stack is reordered in a descending order of metrics." (See, page 1159, paragraph A, lines 10-11.) The metrics depends on a distance of the partial path from the received sequence (see, page 1159, paragraph A, lines 9-10).

It is respectfully submitted that the method of Claim 1 is not anticipated or made obvious by the teachings of Sivasankaran. For example, Sivasankaran does not disclose or suggest, a method that amongst other patentable elements, comprises (illustrative emphasis provided) "a first stage of implementing a stack decoding algorithm for a sequential estimation of a hard-output bit sequence of said variable length soft-input codewords sequence, wherein at each step of the sequential estimation, a stack of paths is reordered placing a current path having a smallest cumulative metric among paths listed in the stack at a top of the stack, including storage of intermediate data contained in the stack and generated by the stack decoding algorithm" as required by Claim 1, and as substantially required by each of Claims 10 and 15. The Office Action relies on Sivasankaran, page 1163, lines 13-40 and FIG. 1 flow chart for showing this but reliance on these areas is misplaced.

PR020495-amd-47-20-06.doc

Patent  
Serial No. 10/527,107  
Amendment in Reply to Office Action of April 20, 2006

Page 1163, lines 13-40 is a discussion of how the metrics are computed by Sivasankaran. The FIG. 1 flow chart for the stack decoder shows that the stacks are broken up into a stack\_0 and a stack\_1 and that the stacks are reordered in the order of the metric, which is made clear to be in descending order of the metric (see, page 1159, paragraph A, lines 10-11, and page 1160, Col. 2, lines 20-22).

Based on the foregoing, the Applicant respectfully submits that independent Claims 1, 10 and 15 are patentable over Sivasankaran and notice to this effect is earnestly solicited. Claims 2, 3, 5-9, 11-14 and 16-17 respectively depend from one of Claims 1 and 15 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of said claims. For example, Sivasankaran does not disclose or suggest "If the last node of the current top path corresponds to a codeword, concatenate the unitary tree with the current tree by placing the initial node of the unitary tree at least at the last node of the current top path" as required by Claim 2 and as substantially required by each of Claims 14 and 17. The FIG. 1 flow chart is cited for showing this feature but reliance on this flow chart is misplaced. The flow chart does shows extending the top state node of each stack but does not specify how they are extended. Page 1159, paragraph A, lines 7-8 discuss extending the stack one interval of time which does nothing to cure the deficiencies in the flow diagram. Sivasankaran also does not disclose or suggest "wherein a position of each path listed in the stack other than the current path having a smallest cumulative metric is maintained when the stack is reordered " as required by Claim 13 and as substantially required by Claim 16. In fact, Sivasankaran specifically teaches that the entire stack is reordered in a descending order of metrics (see, page 1159, paragraph A, lines 10-11).

Accordingly, separate consideration of each of the dependent claims is respectfully requested.

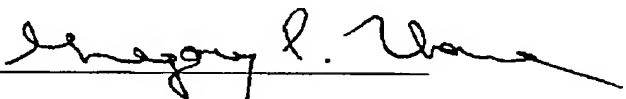
Patent  
Serial No. 10/527,107  
Amendment in Reply to Office Action of April 20, 2006

In addition, Applicant denies any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicant reserves the right to submit further arguments in support of the above stated position, should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

It is believed that no additional fees or charges are currently due for entrance of the accompanying amendment. However, in the event that any additional fees or charges are required for entrance of the accompanying amendment, they may be charged to Applicant's representative Deposit Account No. 50-3649. In addition, please credit any overpayments related to any fees paid in connection with the accompanying amendment to Deposit Account No. 50-3649.

Applicant has made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

By 

Gregory L. Thorne, Reg. 39,398  
Attorney for Applicant(s)  
July 20, 2006

**THORNE & HALAJIAN, LLP**  
Applied Technology Center  
111 West Main Street  
Bay Shore, NY 11706  
Tel: (631) 665-5139  
Fax: (631) 665-5101